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Elizabeth A. Jue

Applicant	: Thomas Dean Gulley	Confirmation No. 9926
Application No.	: 10/080,818	
Filed	: February 22, 2002	
Title	: THREE-PIECE BARREL HINGE	
Grp./Div.	: 3677	
Examiner	: Michael J. Kyle	
Docket No.	: 46893/S1050	

SUBMISSION OF AMENDED APPELLANT'S BRIEFIN RESPONSE TO THE NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
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August 3, 2007

Commissioner:

Enclosed is the Appellant's Amended Brief in response to the Notification of Non-Compliant Appeal Brief.

The Commissioner is hereby authorized to charge any further fees under 37 CFR 1.16 and 1.17 which may be required by this paper to Deposit Account No. 03-1728. Please show our docket number with any charge or credit to our Deposit Account. **A copy of this letter is enclosed.**

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By
Daniel R. Kimbell
Reg. No. 34,849
626/795-9900

DRK/eaj

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TC/A.U.	: 3677	
Examiner	: KYLE, MICHAEL J.	
Docket No.	: 46893/S1050	
Customer No.	: 23363	

AMENDED APPELLANT'S BRIEF

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Commissioner:

1. REAL PARTY IN INTEREST

S.P.E.P. Acquisition Corporation

2. RELATED APPEALS AND INTERFERENCES

None

3. STATUS OF CLAIMS

Claims 1-3, 5-12 and 14-17 are pending. All pending claims stand rejected. All pending claims 1-3, 5-12 and 14-17 are appealed.

4. STATUS OF AMENDMENTS

The amendments filed on November 2, 2006 were entered by the Examiner, and the due date of the response to the final rejection was April 24, 2007. A notice of appeal was filed on February 16, 2007.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The invention is recited in independent claims 1, 9 and 17, and covers a weld-on barrel hinge for hinging together a first item and a second item (claim 1), a three-piece weld-on barrel hinge for hinging together a first item and a second item (claim 9 and 17).

The specification, at page 1, lines 11-32, summarizes Applicant's impetus in making the invention, as follows:

"In order to provide for lubrication of barrel hinges, grease fittings can be included in the hinge designs by being attached to ends of a shaft, with a grease channel provided through the shaft so that grease can be released between the pin and the sleeve. However, for long barrel hinges, it can be costly and difficult to bore a grease channel through the pin for delivery of grease between the pin and the sleeve of the barrel hinge.

Prior art barrel hinges having three sleeve sections have been made by providing three separate sleeves made of seamless tubing and an elongate rod which is retained within bores of the sleeves. Once assembled, the two end sleeves are welded at their ends to the ends of the rod, leaving the intermediate sleeve to freely rotate. These welds require additional labor and are more prone to corrosion than the unwelded portions. These prior designs do not lend themselves to lubrication by use of the grease fitting and therefore requires manual frequent lubrication, or more typically, remain unlubricated. Furthermore, seamless tubing is more costly than seamed tubing.

Accordingly, there remains a need for an improved barrel hinge that is easier to manufacture and maintain, is less prone to rust, has better lubrication properties, and has more consistent quality."

Given the foregoing problem, the inventor developed the recited invention, wherein Claim 1 recites:

1. A weld-on barrel hinge for hinging together a first item and a second item, comprising:

a cylindrical female barrel portion consisting essentially of a cylindrical sidewall with an aperture formed therein, a length, two ends, and an outside surface, and an axial bore, having an interior wall surface and a diameter, the axial bore extending from end to end, wherein the cylindrical sidewall of the cylindrical female barrel portion is welded in place to a first item;

a first and second male barrel portion, each male barrel portion consisting essentially of a cylindrical main body portion with an outer surface, and a pin extension, the pin extension having a pin length and pin diameter, the pin extensions having ends, the pin diameter being sized to be rotatably received within the axial bore of the female barrel portion, wherein the sum of the pin lengths of the pin extensions of the first and second male barrel portions is less than the length of the axial bore of the female barrel portion, such that when the pin extensions of the first and second male barrel portion are fully inserted into the interior bore of the female barrel portion, a cavity is defined by the space between the ends of the first and second pin extensions and the axial bore, which cavity is in the vicinity of the aperture in the sidewall of the female barrel portion, wherein the outer surfaces of the cylindrical main body portions of the first and second male barrel portions are welded directly in place to a second item; and

a lubricant fitting affixed within the aperture in the sidewall of the female barrel portion.

This subject matter is fully supported by the specification, at page 4, line 16 to page 5, line 22. Please also see FIGS. 3-5, where the cylindrical female barrel portion 18, the first and second male barrel portions 14a and 14b, and the lubricant fitting 22 are shown.

Independent claim 9 is similar to claim 1, and recites:

9. A three-piece weld-on barrel hinge for hinging together a first item and a second item, comprising:

a cylindrical female barrel portion having a length, two ends, and a cylindrical outside surface, an axial bore with a diameter extending from end to end therethrough, and an aperture

formed on a sidewall, wherein the cylindrical outside surface of the cylindrical female barrel portion is welded in place to a first item;

a lubricant fitting placed in the aperture; and

a first and second male barrel portion, each male barrel portion having a cylindrical main body portion and a pin extension having a pin length, a pin diameter, and a pin end, the pin diameter being sized to be rotatably received within the axial bore of the female barrel portion, wherein when the pin extensions of the first and second barrel portions are inserted into the axial bore of the female barrel portion, the pin ends are spaced apart to define a cavity therebetween, which cavity is in the vicinity of the lubricant fitting, wherein the outer surfaces of the cylindrical main body portions of the first and second male barrel portions are welded directly in place to a second item.

This subject matter is fully supported by the specification, at page 4, line 16 to page 5, line 22. Please also see FIGS. 3-5, where the cylindrical female barrel portion 18, the first and second male barrel portions 14a and 14b, and the lubricant fitting 22 are shown.

Lastly, independent claim 17, which has a similar scope as claim 1, recites:

17. A three-piece weld-on barrel hinge for hinging together a first item and a second item, comprising:

a female barrel portion made from a section of seamless cylindrical tubing having a length, two ends, a tubing wall with an outside surface, an interior bore with a diameter extending from end to end therethrough, and an aperture is formed in the tubing wall, wherein the outside surface of the cylindrical female barrel portion is welded in place to a first item;

a lubricant fitting affixed within the aperture in the tubing wall of the female portion;

a first and second male barrel portion, each male barrel portion having a cylindrical main body portion with an outer surface and a unitary pin extension having a pin length, a pin diameter, and a pin end, the pin diameter being sized to be received within the interior bore of the female barrel portion, wherein when the pin extensions of the first and second male barrel portions are inserted into the interior bore of the female barrel portion, the pin ends are spaced

apart, and wherein the outer surfaces of each male barrel portion is directly welded to the second item without additional attachment features.

This subject matter is also fully supported by the specification, at page 4, line 16 to page 5, line 22. Please also see FIGS. 3-5, where the cylindrical female barrel portion 18, the first and second male barrel portions 14a and 14b, and the lubricant fitting 22 are shown.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 5, 8, 9, 12, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable of Applicant's admitted prior art (APA) in view of Flamme (U.S. Patent No. 5,561,886) in view of Kent et al. (U.S. Patent No. 5,774,938).

Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Flamme and Kent et al. as applied to claim 1, and further in view of Huppert, Sr. (U.S. Patent No. 5,772,538).

Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Flamme and Kent et al. as applied to claim 1, and further in view of Dodge (U.S. Patent No. 132,147).

Lastly, claims 6, 7, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Flamme and Kent et al. as applied to claim 1, and further in view of Simpson (U.S. Patent No. 470,514).

7. ARGUMENT

For purpose of this appeal, claims 1-3, 5-12 and 14-17 stand or fall together as a group.

A. The Cited References Do Not Establish a Prima Facie Case of Obviousness of the Claims under 35 U.S.C. 103(a)

1. Claims 1, 5, 8, 9, 12, 14, and 17 are not Obvious over Applicant's admitted prior art in view of Flamme in view of Kent et al.

The Examiner rejects claims 1, 5, 8, 9, 12, 14 and 17 under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (APA) in view of U.S. Patent No. 5,561,886 to Flamme in view of U.S. Patent No. 5,774,938 to Kent.

The Examiner states that APA discloses a barrel hinge comprising a cylindrical female barrel portion 4b having an axial bore extending from end to end, and first and second male barrel portions 4a, 4c having cylindrical main bodies. APA also discloses that the female barrel portion comprises seamless cylindrical tubing. Furthermore, APA discloses the male and female barrel portions are adapted to be welded to objects. The Examiner notes that APA does not disclose the male barrel portions as having a pin extension or the female barrel portion as including an aperture for a lubricant fitting.

The Examiner next states that Flamme discloses a cylindrical female barrel portion (20) and first and second cylindrical male barrel portions (11, 12). The female barrel portion has a sidewall (21), outside surface, axial bore, and interior wall surface while the male barrel portions have a main body portion (25), outer surface, pin extensions (13), and pin ends (13) substantially as claimed. The two male portions are identical and are rotatably received in the female portion. Flamme uses this arrangement to provide for easy assembly and mounting of a door on a body via the hinge column. The Examiner states that it would have been obvious to one having ordinary skill in the art to modify APA as taught by Flamme, in order to provide a hinge that allows for easy mounting and assembly of a door on body, via the hinge. The Examiner states that this combination would result in the pin (6) of APA being replaced with the pair of pins (13 and 14) of Flamme. The Examiner further notes that because pin extensions 3 and 15 function with the male barrel portions as a single unit, the pin extensions are considered to be unitary with the barrel portions.

With Kent et al., the Examiner notes that it teaches a female portion (10) with an aperture for a lubricant fitting (58) for the purpose of providing the interior space of the cylindrical portion of the hinge with grease. Accurately pointed out is the fact that grease protects various assemblies from outside contamination. The Examiner states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a lubricant

fitting in an aperture of Flamme's female member in order for the hinge to retain lubrication, which protects the assembly from outside contaminants.

Applicant has carefully studied the above three noted references and respectfully submits that one having ordinary skill in the art would not find it obvious to combine the references, and that even if they were combined, they would still not lead to the claimed invention. The Flamme reference discloses a completely different structure designed for screw on application, which is completely different than the weld on application of the APA. The hinge of Flamme is a separatable hinge designed to be quickly detached from a switch cabinet or instrument cabinet door. On the other hand, the APA is a permanently mounted hinge which is directly welded to the pieces to be hinged together and is not intended to ever be separated. In the Flamme application, the hinge band (22) is continuous with the hinge hole (21). This hinge part (20) is fixed to the door by the hinge band (22). (See column 3, lines 54-56.) The two male portions (11 and 12) are likewise not welded to the frame but are instead held to the door frame by mounting flanges (15 and 16), which are connected to a sleeve-like receptacles (25 and 26) which are fitted with hinge pins (13 and 14).

The Examiner states that "[i]t would have been obvious to one having ordinary skill in the art at the time of the invention to modify APA as taught by Flamme, in order to provide a hinge that allows for easy mounting and assembly of a door on body, via the hinge. The combination would result in the pin (6) of the APA being replaced with the pair of pins (13 and 14) of Flamme. The Examiner notes that because pin extensions 13 and 14 function with the male barrel portions as a single unit, the pin extensions are considered to be unitary with the barrel portion." The point of Flamme is to provide a <u>separatable hinge</u> while the APA is designed as a weld on hinge that is <u>not separatable</u>. Therefore, one having ordinary skill in the art would find no motivation to combine these two references. Also, with respect to the Examiner's statement that the combination would result in the pin (6) of the APA being replaced with the pair of pins (13 and 14) of Flamme, once again, Flamme does not provide any motivation for this since the APA is directed to a hinge that once assembled and attached to parts to be hinged together, is not intended to be removed.

With respect to Kent et al., Applicant respectfully disagrees that the teaching of Kent et al. would be turned to by those having ordinary skill in the art of weld-on hinges. Kent et al. is directed to a very specialized locking device for locking a closure in an open position which is used for critical usage, such as an emergency release hatch for emergency door exits for school buses and the like. This style of hinges may never actually have to be used, but must be ready for a user to detach a door from a hinge in an emergency situation where the door will not open, but must be removed for ingress and/or egress from the vehicle.

The criticality of incorporating a lubricating device is thus apparent in Kent et al. In contrast with Kent, is the more mundane purpose of the weld-on hinge of the APA, which is designed to prevent any detachment of a door from its frame. As such, one having ordinary skill in the art of weld-on hinges would have no motivation to supply a lubrication fitting to the APA. Furthermore, as shown in the drawings of Flamme, the male pins (13 and 14) of the male barrel portion barely enter the two opposite ends of the elongate female portion (20). Therefore, even if a grease fitting was placed on the female portion (20), a very large volume of grease would need to be injected into the hole (21) in order for lubrication to be provided to the pins (13 and 14) located at the ends thereof.

Moreover, unlike the situation of Kent et al., where lubrication is deemed necessary to separate the two parts of the hinge to provide for emergency release, in the case of a Flamme hinge, it is not used for such emergency purposes and furthermore, the male portions can be separated from the female portions by unscrewing the male portions and sliding them apart from the female portion. One having ordinary skill in the art would find no motivation to combine the references because there is no need for lubrication in a hinge design such as in Flamme.

The Examiner states that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. The Examiner states that the method of attachment of Flamme does not affect its combination with the APA since the APA teaches the claimed method of attachment, welding, and Flamme is cited for the teaching of a pin extension, which the Examiner states aids in assembly by easily lining up with the borehole and that this is true regardless of how the hinge is attached to the surrounding structure.

Applicant has carefully considered the Examiner's position including the cited cases, and respectfully believes that one having ordinary skill in the art would not find a motivation to combine the references. The law is clear that the prior art suggestions to combine must be explication or implicit, and that the motivation must be clear and particular. In re Dembiczak, 175 F. 3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999), a Federal Circuit panel emphasized that in order to reject a claim on the grounds of obviousness in view of a combination of prior art references, a showing of a suggestion, teaching or motivation must be clear and particular (50 USPQ2d at 1617). In Dembiczak, the claimed invention was an orange plastic bag decorated with a jack-o'-lantern face. The Patent Office references were conventional orange trash bags and children's art with jack-o'-lantern faces on the outside of paper sacks. The PTO, in In Dembiczak, did not provide actual evidence supporting a suggestion to combine.

In the recently decided U.S. Supreme Court case KSR International Co. v. Teleflex Inc., No. 04-1350 (U.S. Apr. 30, 2007), the court rendered an opinion regarding the issue of obviousness under 35 U.S.C. § 103(a) when the claim recites a combination of elements of the prior art. The Supreme Court reaffirmed the Graham factors in the determination of obviousness under 35 U.S.C. § 103(a), which are: (a) determining the scope and contents of the prior art; (b) ascertaining the differences between the prior art and the claims in issue; (c) resolving the level of ordinary skill in the pertinent art; and (d) evaluating evidence of secondary consideration. The Court did not totally reject use of the "teaching, suggestion, or motivation" as a factor in the obviousness analysis, but recognized that a showing of "teaching, suggestion, or motivation" to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. § 103(a). However, the Court rejected a rigid application of the "teaching, suggestion, or motivation" (TSM) test, which required a showing of some teaching, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the prior art elements in the manner claimed in the application before holding the claimed subject matter to be obvious. The Supreme court also noted in its analysis that a rejection under 35 U.S.C. 103(a) should be made explicit, and that it was "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. Also more importantly,

the KSR court summarized *United States v. Adams*, 383 U.S. 39, 40 (1966) for the "corollary principal that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious. Id., at 51-52".

The KSR International Co. case is not inconsistent with In re Dembiczak. In the present application, the Examiner states that the motivation to combine arises out of the pin extension aiding in assembly by easily lining up with the borehole, and that the fact that Applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious (citing *Ex parte Obiaya*, USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Applicant has reviewed the *Ex parte Obiaya* and respectfully disagrees with the Examiner's position. The so-called easy assembly feature has nothing to do with the claimed invention where the female barrel portion and male barrel portions are directly welded to the items to be hinged together, with the terminal ends of the pins of the male barrel portions being spaced apart in the female barrel portion with the grease fitting, so that the hinge can be lubricated. Indeed, the prior art barrel hinge designs are intended for super heavy duty applications, such as for hinging the heavy doors of ocean shipping containers and the like. The short tabs 13 and 14, separated by a great distance of the cited Flamme reference, would not suggest to one of ordinary skill in the art in the area of barrel hinges to replace the two end tubes and the central bar with two male barrel portions with pin extensions since such a design would lack strength. Furthermore, the cabinet side hinge portions (11 and 12) (analogues for the male barrel portions of Applicant's claimed invention) cannot be welded in place, otherwise it would destroy their function. Thus, Flamme et al teaches away from the claimed invention. Accordingly, based on these facts, one having ordinary skill in the art of barrel hinges would not find a motivation to combine the APA and Flamme.

Applicant respectfully submits that the Examiner has engaged in hindsight reconstruction of the facts by piecing together cited references that do not provide any motivation for the claimed invention. In doing so, the Examiner has raised some possible motivations that have nothing to do with the claimed invention. Nonetheless, these motivations would not have

reasonably lead one of ordinary skill in the art to invent the invention for the reasons noted above.

Lastly, if arguendo, the Examiner has raised a proper *prima facie* obviousness rejection under 35 U.S.C. 103(a), which Applicant does not believe to be the case, there is at least one secondary factor that demonstrates lack of obviousness. Barrel hinges and grease fittings are quite old and are widely used. Furthermore, the problems associated with prior art barrel hinges are known and are not a recent development, but have long existed. Applicant's invention does not involve any new materials or assembly technology that recently came into existence, but instead uses basic components such as metal bars and tubing and grease fittings. Anyone could have come up with Applicant's invention decades and decades ago, but they did not. This, accordingly, provides secondary evidence of lack of obviousness of the claimed invention, and reversal of this ground of rejection is accordingly requested.

Accordingly, Applicant respectfully submits that the rejection of claims 1, 5, 8, 9, 12, 14, and 17 as being obvious should be reversed.

2. Claims 3 and 11 are not Obvious over Applicant's admitted prior art in view of Flamme and Kent et al. as applied to claim 1, and further in view of Huppert, Sr.

The Examiner rejects claims 3 and 11 under 35 U.S.C. 103(a) as being unpatentable over the APA in view of Flamme and Kent as applied to claim 1 and further in view of U.S. Patent No. 5,771,538 to Huppert, Sr. The Examiner states that the combination of the APA, Flamme and Kent fail to disclose the lubricant fitting as threadably engageable with the female barrel portion, but note that Huppert teaches a lubricant fitting (16) which is threadably engaged with the barrel portion (14). The Examiner states it would have been obvious to one having ordinary skill in the art at the time the invention was made to fasten the lubricant fitting with threads to the female barrel portion so that one can readily remove the grease fitting without the lubricant fitting falling off. Applicant would respectfully submit that for the same reasons that the basic invention of independent claims 1 and 9 is not obvious over the APA in view of Flamme and Kent et al., claims 3 and 11 should be allowable as well.

3. Claims 2 and 10 are not Obvious over Applicant's admitted prior in view of Flamme and Kent et al. as applied to claim 1, and further in view of Dodge.

Turning to the rejection of claims 2 and 10 under 35 U.S.C. 103(a) as being unpatentable over the APA in view of Flamme and Kent in further view of U.S. Patent no. 132,147 to Dodge. The Examiner states that Dodge teaches the ends of a female barrel portion as outwardly beveled (c) and the main portions of the male portions are also outwardly beveled (at 1, see figure 2) to form a groove in interface regions where the bevels at the ends of the female barrel portion are adjacent to bevels where the pin extensions extend from the main body portions, so that when the portions are connected together, the joint is so closed as to exclude rain and dust which would otherwise get into the socket and displace the lubricant and wear away the surfaces. Claims 2 and 10 were previously amended to more precisely state that "the two ends of the female barrel portion are outwardly beveled where the outside surface meets the two ends, and wherein the main body portions of the male barrel portions are outwardly beveled where the pin extensions extend therefrom to form a groove in interface regions where the bevels at the two ends of the female barrel portion are adjacent to bevels where the pin extensions extend from the main body portions." The Examiner's response was that the limitation of "outwardly" is a relative term, and that in this claim, it does not describe as to which element the bevel extends outwardly from, with the Examiner noting that on the female portion the bevel extends outwardly relative to the body and longitudinal axis of that portion. The bevel of the male portion also extends outwardly relative to those elements.

Applicant respectfully submits that in Dodge, no such groove is formed between the so-called bevels of any of the embodiments. Accordingly, Applicant respectfully submits that the rejection of claims 2 and 10 as being obvious should be reversed.

4. Claims 6, 7, 15, and 16 are not Obvious over Applicant's admitted prior in view of Flamme and Kent et al. as applied to claim 1, and further in view of Simpson.

Lastly, with respect to the rejection of claim 6, 7, 15 and 16, the Examiner states that Simpson teaches male portions (A, B) constructed from solid bar or solid cylindrical stock, and

that the selection of a known material based upon its suitability for the intended use is a design consideration with the skill of the art. In Simpson, the subject mater was a lightning conductor made up of a section of a hollow metal tubing permanently attached together by crimps. Applicant respectfully submits that the Simpson reference is devoid of any teaching to which it is cited for, and that therefore, the rejection of claims 6, 7, 15, and 16 as being obvious should be reversed.

8. CLAIMS APPENDIX

A claims appendix is attached.

9. EVIDENCE APPENDIX

None.

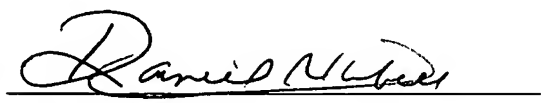
10. RELATED PROCEEDINGS APPENDIX

None

C. Conclusion

The Examiner has erred in rejecting claims 1-3, 5-12 and 14-17 based on Applicant's admitted prior in view of Flamme and Kent et al. plus Huppert, Sr., Dodge, and Simpson since the combination of these references would not be obvious to one of ordinary skill in the art, that if these references were to be combined, the function would be compromised, and furthermore that there are secondary factors which would lead again from a conclusion of obviousness. Therefore, the decision of the Examiner should be reversed.

Respectfully submitted,
CHRISTIE, PARKER & HALE, LLP

By 
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8. CLAIM APPENDIX

1. (Previously presented) A weld-on barrel hinge for hinging together a first item and a second item, comprising:

a cylindrical female barrel portion consisting essentially of a cylindrical sidewall with an aperture formed therein, a length, two ends, and an outside surface, and an axial bore, having an interior wall surface and a diameter, the axial bore extending from end to end, wherein the cylindrical sidewall of the cylindrical female barrel portion is welded in place to a first item;

a first and second male barrel portion, each male barrel portion consisting essentially of a cylindrical main body portion with an outer surface, and a pin extension, the pin extension having a pin length and pin diameter, the pin extensions having ends, the pin diameter being sized to be rotatably received within the axial bore of the female barrel portion, wherein the sum of the pin lengths of the pin extensions of the first and second male barrel portions is less than the length of the axial bore of the female barrel portion, such that when the pin extensions of the first and second male barrel portion are fully inserted into the interior bore of the female barrel portion, a cavity is defined by the space between the ends of the first and second pin extensions and the axial bore, which cavity is in the vicinity of the aperture in the sidewall of the female barrel portion, wherein the outer surfaces of the cylindrical main body portions of the first and second male barrel portions are welded directly in place to a second item; and

a lubricant fitting affixed within the aperture in the sidewall of the female barrel portion.

2. (Previously presented) The weld-on barrel hinge of claim 1, wherein the two ends of the female barrel portion are outwardly beveled where the outside surface meets the two ends, and wherein the main body portions of the male barrel portions are outwardly beveled where the pin extensions extend therefrom to form a groove in interface regions where the bevels at the two ends of the female barrel portion are adjacent to bevels where the pin extensions extend from the main body portions.

3. (Previously presented) The weld-on barrel hinge of claim 1, wherein the aperture in the sidewall of the female barrel portion is threaded and the lubricant fitting is threadably engaged therewith.

4. (Canceled)

5. (Previously presented) The weld-on barrel hinge of claim 1, wherein the female barrel portion comprises a section of seamless cylindrical tubing.

6. (Previously presented) The weld-on barrel hinge of claim 1, wherein each of the male barrel portions is formed from a section of solid bar stock with the pin extension portions being formed by machining at one end thereof.

7. (Previously presented) The weld-on barrel hinge of claim 1, wherein each of the male barrel portions is formed from a section of solid cylindrical stock with the pin extension portions machined at one end thereof.

8. (Previously presented) The weld-on barrel hinge of claim 1, wherein the first and second male barrel portions are identical.

9. (Previously presented) A three-piece weld-on barrel hinge for hinging together a first item and a second item, comprising:

a cylindrical female barrel portion having a length, two ends, and a cylindrical outside surface, an axial bore with a diameter extending from end to end therethrough, and an aperture formed on a sidewall, wherein the cylindrical outside surface of the cylindrical female barrel portion is welded in place to a first item;

a lubricant fitting placed in the aperture; and

a first and second male barrel portion, each male barrel portion having a cylindrical main body portion and a pin extension having a pin length, a pin diameter, and a pin end, the pin

diameter being sized to be rotatably received within the axial bore of the female barrel portion, wherein when the pin extensions of the first and second barrel portions are inserted into the axial bore of the female barrel portion, the pin ends are spaced apart to define a cavity therebetween, which cavity is in the vicinity of the lubricant fitting, wherein the outer surfaces of the cylindrical main body portions of the first and second male barrel portions are welded directly in place to a second item.

10. (Previously presented) The weld-on barrel hinge of claim 9, wherein the two ends of the female barrel portion are outwardly beveled where the outside surface meets the two ends, and wherein the main body portions of the male barrel portions are outwardly beveled where the pin extensions extend therefrom_to form a groove in interface regions where the bevels at the two ends of the female barrel portion are adjacent to bevels where the pin extensions extend from the main body portions.

11. (Previously presented) The weld-on barrel hinge of claim 9, wherein the aperture in the sidewall of the female barrel portion is threaded and the lubricant fitting is threadably engaged therewith.

12. (Previously presented) The weld-on barrel hinge of claim 9, wherein the lubricant fitting is press fitted into the aperture in the sidewall of the female barrel portion.

13. (Canceled)

14. (Previously presented) The weld-on barrel hinge of claim 9, wherein the female barrel portion comprises a section of seamless cylindrical tubing.

15. (Previously presented) The weld-on barrel hinge of claim 9, wherein each of the male barrel portions is formed from a section of solid bar stock with the pin extension portions being formed at one end thereof.

16. (Previously presented) The weld-on barrel hinge of claim 9, wherein each of the male barrel portions is formed from a section of solid cylindrical stock with the pin extension portions machined at one end thereof.

17. (Previously presented) A three-piece weld-on barrel hinge for hinging together a first item and a second item, comprising:

a female barrel portion made from a section of seamless cylindrical tubing having a length, two ends, a tubing wall with an outside surface, an interior bore with a diameter extending from end to end therethrough, and an aperture is formed in the tubing wall, wherein the outside surface of the cylindrical female barrel portion is welded in place to a first item;

a lubricant fitting affixed within the aperture in the tubing wall of the female portion;

a first and second male barrel portion, each male barrel portion having a cylindrical main body portion with an outer surface and a unitary pin extension having a pin length, a pin diameter, and a pin end, the pin diameter being sized to be received within the interior bore of the female barrel portion, wherein when the pin extensions of the first and second male barrel portions are inserted into the interior bore of the female barrel portion, the pin ends are spaced apart, and wherein the outer surfaces of each male barrel portion is directly welded to the second item without additional attachment features.

18. (Canceled)

19. (Canceled)

20. (Canceled)